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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Lawrence W. CLARK et al.) Group Art Unit: 2121
Application No.: 10/628,155) Examiner: HARTMAN JR., RONALD D.
Filed: July 28, 2003) Confirmation No.: 4367
For: A METHOD AND APPARATUS)
OF MANUFACTURING)

Attention: Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF UNDER BOARD RULE § 41.37

In support of the Notice of Appeal filed June 27, 2006, and further to Board Rule 41.37, Appellants present this brief and enclose herewith a check for the fee of \$500.00 required under 37 C.F.R. § 1.17(c).

This Appeal is in response to the final rejection of claims 1-4 and 6-19 in the Office Action mailed on March 29, 2006 and the Notice of the Panel Decision from Pre-Appeal Brief Review mailed on August 14, 2006. The deadline for filing this Brief extends to November 14, 2006 by the two-month Extension of Time filed herewith.

If any additional fees are required or if the enclosed payment is insufficient, Appellants request that the required fees be charged to Deposit Account No. 06-0916.

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Real Party In Interest

Caterpillar Inc. is the real party in interest.

Related Appeals and Interferences

There are currently no other appeals or interferences, of which Appellants, Appellants' legal representative, or Assignee are aware of, that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status Of Claims

Claims 1-4 and 6-19 are pending in this application. Claims 1-4 and 6-19 have been finally rejected and are appealed. A copy of these claims is provided in the attached Claims Appendix to this Appeal Brief.

Status Of Amendments

No amendments to the claims have been filed subsequent to the final rejection of claims 1-4 and 6-19 mailed on March 29, 2006.

Summary Of Claimed Subject Matter

The invention relates generally to a method of providing a manufacturing instruction change to a manufacturing process during, and as part of, the normal operation of the process.

The embodiment recited in independent claim 1 is directed to a computer based method of displaying a changed manufacturing instruction. See specification at page 2, paragraph no. 4, and Fig. 1. The method includes establishing a desired fluid change associated with a manufacturing characteristic. See specification at page 2, paragraph no. 4; pages 2-3, paragraph no. 12; and Fig. 2. The method also includes enabling a change in a manufacturing instruction in response to said desired fluid change. See specification at page 2, paragraph no. 4; page 6, paragraph no. 20; and Fig. 2. The method further includes displaying said changed manufacturing instruction associated with a manufacturing component on a display screen associated with a first manufacturing workstation. See specification at page 2, paragraph no. 4; page 7, paragraph no. 21; and Fig. 2.

The embodiment recited in independent claim 9 is directed to a computer based method of displaying a changed manufacturing instruction. See specification at page 2, paragraph no. 4, and Fig. 1. The method includes establishing a desired fluid change in a manufacturing characteristic. See specification at page 2, paragraph no. 4; pages 2-3, paragraph no. 12; and Fig. 2. The method also includes enabling a change in a manufacturing instruction in response to said desired fluid change. See specification at page 2, paragraph no. 4; page 6, paragraph no. 20; and Fig. 2. The method further

includes displaying said changed manufacturing instruction associated with a manufacturing component on a display screen associated with a first manufacturing workstation in response to a defined time based event occurring. See specification at page 2, paragraph no. 4; page 7, paragraph no. 21; page 9, paragraph no. 28; page 10, paragraph no. 30; and Fig. 2.

The embodiment recited in independent claim 12 is directed to a computing system for use in a manufacturing line. See specification at page 2, paragraph no. 5, and Fig. 1. The method includes a plurality of workstations, each of said workstations including a display. See specification at page 2, paragraph no. 5; page 3, paragraph no. 11; and Fig. 1. The method also includes a computer controller connected to said workstations for receiving a desired fluid change associated with a manufacturing characteristic, enabling a change in a manufacturing instruction in response to said desired fluid change, and displaying said changed manufacturing instruction associated with a manufacturing component on workstation display. See specification at page 2, paragraph no. 5; page 3, paragraphs no. 11 and 12; page 6, paragraph no. 20; page 7, paragraph no. 21; Fig. 1, and Fig. 2.

The embodiment recited in independent claim 18 is directed to a computer based method of displaying a changed manufacturing instruction. See specification at page 2, paragraph no. 4, and Fig. 1. The method includes establishing a change associated with a manufacturing characteristic. See specification at page 2, paragraph no. 4; pages 2-3, paragraph no. 12; and Fig. 2. The method also includes enabling said change in a manufacturing instruction in response to said changed manufacturing characteristic. See specification at page 2, paragraph no. 4; page 6, paragraph no. 20;

and Fig. 2. The method further includes displaying said changed manufacturing instruction associated with a manufacturing component on a display screen associated with a first manufacturing workstation. See specification at page 2, paragraph no. 4; page 7, paragraph no. 21; and Fig. 2. The method also includes changing a manufacturing instruction associated with a second manufacturing workstation in response to not performing said changed manufacturing instruction. See specification at page 8, paragraph no. 23; page 7, paragraph no. 21; and Fig. 2.

Grounds of Rejection

A. Claims 1, 7-9, and 12 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,240,328 to LaLonde et al. ("LaLonde").

B. Claims 2, 6, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of Official Notice.

C. Claims 3 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of U.S. Patent No. 5,341,304 to Sakamoto et al. ("Sakamoto").

D. Claims 4, 10, 11, and 13-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of U.S. Patent No. 6,477,437 to Hirota ("Hirota").

Argument

A. The rejection of claims 1, 7-9, and 12 under 35 U.S.C. § 102(e) as being anticipated by LaLonde should be withdrawn

The Examiner rejected claims 1, 7-9, and 12 under 35 U.S.C. § 102(e) as being anticipated by LaLonde. To anticipate a claim, the reference must teach each and every element of the claim. *Union Carbide Chemicals & Plastics Tech. Corp. v. Shell Oil Co.*, 308 F.3d 1167, 1188, 64 USPQ2d 1545, 1560 (Fed. Cir. 2002); *see also* M.P.E.P. § 2131. The Board should reverse the rejection because LaLonde does not teach each and every element of claims 1, 7-9, and 12.

Appellants respectfully assert that this rejection is improper because LaLonde does not disclose each and every element as set forth in the claims. For example, with respect to independent claim 1, LaLonde does not disclose, among other aspects, “a computer based method of displaying a changed manufacturing instruction,” including “establishing a desired fluid change associated with a manufacturing characteristic and enabling a change in a manufacturing instruction in response to said desired fluid change.”

LaLonde discloses a manufacturing method for “assembling a number of products by generating and scheduling dynamically a number of assembly instructions from modeling information.” LaLonde, Abstract. LaLonde further discloses allowing for “exact assembly instructions to be generated for the full theoretical scope of the product line.” LaLonde, col. 1, ll. 41-43. LaLonde adds that “[t]he generated instructions do not require any human lookup or inference” and that the instructions “required to build the final product are derived from a ‘model’ of the product.” LaLonde col. 1, ll. 45-46 and ll.

48-49. In other words, LaLonde discloses utilizing modeling information to generate and dynamically schedule assembly instructions for a number of parts. LaLonde fails to disclose or suggest “establishing a desired fluid change associated with a manufacturing characteristic” and “enabling a change in a manufacturing instruction in response to the desired fluid change,” as recited in claim 1. Accordingly, LaLonde cannot anticipate claim 1 and its dependent claims.

According to the final Office Action, “the features upon which applicant relies (i.e. ‘a mechanism for changing the manufacturing instructions without a need to halt the operation of an assembly line’) are not recited in the rejected claim(s),” adding that “[a]lthough the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.” Final Office Action at page 2. Appellants specifically defined the term “fluid change” to include “a change without the need to halt the operation of an assembly line.” Specification at page 4, ll. 1-2. That is, Appellants have acted as their own lexicographer and have provided a definite definition for the term “fluid change.” See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980, 34 USPQ2d 1321 (Fed. Cir. 1995) (*en banc*), *aff’d* 517 U.S. 370, 38 USPQ2d 1461 (1996).

The final Office Action further contends that the element “establishing a desired fluid change associated with a manufacturing characteristic” may be “interpreted to be the functional equivalent of changing any, *meaning possibly more than one*, manufacturing characteristic of any, *meaning possibly more than one* product” and cites “Abstract; Figure 1; C2 L31-42; C2 L53-61” of LaLonde. Office Action at page 3. As noted above, Appellants have specifically defined the term “fluid change.” Moreover, the citations to LaLonde provided in the Office Action do not suggest or disclose the

making of a change in manufacturing or assembly required by claim 1. Rather, these portions of LaLonde disclose generating and scheduling assembly instructions for products based on modeling information. For instance, one such citation in LaLonde provides:

FIG. 2 shows a manufacturing method for generating and scheduling dynamically a number of customized products to be built in a manufacturing facility in accordance with a preferred embodiment of the present invention. Basically, as shown in FIG. 2, configuration models are received by scheduling tool 5. The models are converted into an exact sequence of encoded work instructions (EWI's), distributed to selected assembly stations and displayed at the appropriate assembly station 60 on the assembly line.

LaLonde, col. 2, ll. 53-62. This recitation discloses converting models into work instructions and distributing the work instructions to assembly stations. It does not disclose or suggest "establishing a desired fluid change" and "enabling a change in a manufacturing instruction," as recited in claim 1. Accordingly, reversal of the rejection against claim 1 and its dependent claims is requested.

Similar to the arguments presented above, LaLonde does not disclose each and every element of independent claim 9. Claim 9 recites, among other aspects, "establishing a desired fluid change in a manufacturing characteristic" and "enabling a change in a manufacturing instruction in response to said desired fluid change." As fully set forth above, LaLonde discloses utilizing modeling information to generate and dynamically schedule assembly instructions for a number of parts. LaLonde neither discloses "establishing a desired fluid change" nor "enabling a change in a manufacturing instruction" as recited in claim 9. Thus reversal of the section 102(e) rejection of claim 9 and its dependent claims is respectfully requested.

Appellants further submit that for similar reasons presented above, LaLonde fails to disclose each and every element of independent claim 12. For example, among other things, LaLonde fails to disclose or suggest “a computer controller connected to said workstations for receiving a desired fluid change associated with a manufacturing characteristic” and “enabling a change in a manufacturing instruction in response to said desired fluid change.” As noted above, LaLonde discloses a manufacturing method for “assembling a number of products by generating and scheduling dynamically a number of assembly instructions from modeling information.” LaLonde, Abstract. LaLonde does not disclose a computer controller for receiving a desired fluid change or enabling a change in a manufacturing instruction as required by claim 12. Accordingly, Appellants request reversal of the section 102(e) rejection of claim 12.

B. The rejection of claims 2, 6, and 19 under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of Official Notice should be withdrawn

The Examiner rejected claims 2, 6, and 19 under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of Official Notice. A *prima facie* case of obviousness requires that the prior art references, when combined, must teach or suggest every aspect of the claims. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); see also M.P.E.P. § 2143. The Board should reverse this rejection because LaLonde, either alone or in combination with the Official Notice, fail to disclose or suggest every element of dependent claims 2, 6, and 19.

Appellants submit that the Official Action taken by the Examiner fails to remedy the deficiency noted above regarding LaLonde. The Office Action does not rely on the

Official Notice to disclose or suggest “a computer based method of displaying a changed manufacturing instruction, comprising the steps of establishing a desired fluid change associated with a manufacturing characteristic and enabling a change in a manufacturing instruction in response to said desired fluid change,” as recited in independent claim 1. As fully established above in connection with independent claim 1, LaLonde fails to disclose or suggest the above recitation.

Claims 2, 6, and 19 depend from claim 1 and are therefore also allowable for at least the same reasons that claim 1 is allowable. In addition, each of claims 2, 6, and 19 recite unique combinations that are neither taught nor suggested by LaLonde and the Official Notices, and therefore each is also separately patentable. Reversal of the section 103(a) rejection is requested.

C. The rejection of claims 3 and 18 under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of Sakamoto should be withdrawn

The Examiner rejected claims 3 and 18 under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of Sakamoto. A *prima facie* case of obviousness requires that the prior art references, when combined, must teach or suggest every aspect of the claims. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); see also M.P.E.P. § 2143. The Board should reverse this rejection because LaLonde and Sakamoto, either alone or in combination, fail to disclose or suggest every element of claims 3 and 18.

Appellants submit that Sakamoto does not cure the shortcomings noted above with respect to LaLonde. For example, independent claim 18 recites, among other

aspects, “establishing a change associated with a manufacturing characteristic; enabling said change in a manufacturing instruction in response to said changed manufacturing characteristic . . . and changing a manufacturing instruction associated with a second manufacturing workstation in response to not performing said changed manufacturing instruction.” As fully presented above, LaLonde fails to disclose or suggest “establishing a change associated with a manufacturing characteristic” and “enabling said change in a manufacturing instruction.” The Office Action does not rely on Sakamoto for disclosing the above recitation but for allegedly disclosing “changing the instruction, for a second workstation, on a second display if the change is not performed by a first workstation” and cites to claim 8 of Sakamoto for this teaching. Final Office Action at page 6.

Sakamoto discloses that “an object of the present invention is to transmit the presence of defects which occur on an assembly line to a correction line efficiently and reliably” and adds that it is “difficult to correct defects at the positions in the line where they occur.” Sakamoto, col. 2, ll. 5-11 and 61-65. In other words, Sakamoto discloses transferring defects from one assembly line to another assembly line for correction. Sakamoto does not disclose or suggest “changing a manufacturing instruction associated with a second manufacturing workstation in response to not performing said changed manufacturing instruction,” as recited in independent claim 18. While claim 8 of Sakamoto provides “[a] system according to claim 1, wherein said correction station line has a plurality of correction stations,” this recitation fails to disclose or suggest “changing a manufacturing instruction associated with a second manufacturing

workstation,” recited in independent claim 18. Reversal of the section 103(a) rejection of claim 18 is requested.

In response to the rejection of claim 3 in view of LaLonde and Sakamoto, Appellants submit that claim 3 depends from independent claim 1 and is therefore allowable for at least the same reasons stated above with respect to claim 1.

D. The rejection of claims 4, 10, 11, and 13-17 under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of Hirota should be withdrawn

The Examiner rejected claims 4, 10, 11, and 13-17 under 35 U.S.C. § 103(a) as being unpatentable over LaLonde in view of Hirota. A *prima facie* case of obviousness requires that the prior art references, when combined, must teach or suggest every aspect of the claims. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); see also M.P.E.P. § 2143. The Board should reverse this rejection because LaLonde and Hirota, either alone or in combination, fail to disclose or suggest every element of claims 4, 10, 11, and 13-17.

Appellants submit that Hirota fails to cure the shortcomings noted above with respect to LaLonde regarding independent claim 1. Similar to the arguments fully set forth above, LaLonde fails to disclose or suggest “a computer based method of displaying a changed manufacturing instruction, comprising the steps of establishing a desired fluid change associated with a manufacturing characteristic and enabling a change in a manufacturing instruction in response to said desired fluid change,” as recited in independent claim 1. Hirota discloses “an assembly work support system that provides instructions from the system to a worker regarding work procedures, work

contents, and particular instruction points, and receives information from the worker.”

Hirota, col. 1, ll. 13-17. Hirota fails to disclose or suggest “establishing a desired fluid change associated with a manufacturing characteristic and enabling a change in a manufacturing instruction.”

Claims 4, 10, 11, and 13-17 each depend either directly or indirectly from one of independent claims 1 and 9, and each is therefore allowable for at least the same reasons stated above with respect to claims 1 and 9.

Conclusion

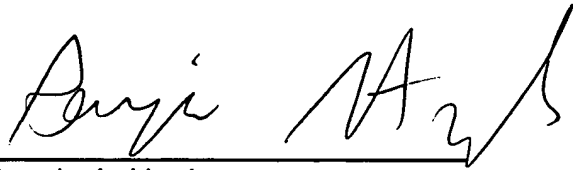
For the reasons given above, pending claims 1-4 and 6-19 are allowable, and reversal of the Examiner's rejection is respectfully requested.

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this Appeal Brief, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: November 14, 2006

By: 
Panyin A. Hughes
Reg. No. 55,288

Claims Appendix to Appeal Brief Under Rule 41.37(c)(1)(viii)

1. (Previously Presented) A computer based method of displaying a changed manufacturing instruction, comprising the steps of:

establishing a desired fluid change associated with a manufacturing characteristic;

enabling a change in a manufacturing instruction in response to said desired fluid change; and

displaying said changed manufacturing instruction associated with a manufacturing component on a display screen associated with a first manufacturing workstation.

2. (Previously Presented) The method as set forth in claim 1, further comprising the step of stopping a manufacturing line associated with the manufacturing workstation if the changed manufacturing instruction is not performed.

3. (Previously Presented) The method as set forth in claim 1, further comprising the step of changing a manufacturing instruction associated with a second manufacturing workstation in response to not performing said changed manufacturing instruction.

4. (Previously Presented) The method as set forth in claim 1, further comprising the step of highlighting at least one of a location of a first and second manufacturing component associated with the changed manufacturing instruction.

5. (Canceled).

6. (Previously Presented) The method as set forth in claim 1, further comprising the step of ordering said a second manufacturing component in response to the changed manufacturing instruction.

7. (Previously Presented) The method as set forth in claim 1, further comprising the step of sending the changed manufacturing instruction associated with a second manufacturing component to a display screen on the first manufacturing workstation in preparation for a manufacturing operation.

8. (Previously Presented) The method as set forth in claim 1, further including the step of a first manufacturing workstation pulling said changed manufacturing instruction from a repository.

9. (Previously Presented) A computer based method of displaying a changed manufacturing instruction comprising the steps of:

establishing a desired fluid change in a manufacturing characteristic;

enabling a change in a manufacturing instruction in response to said desired fluid change and

displaying said changed manufacturing instruction associated with a manufacturing component on a display screen associated with a first manufacturing workstation in response to a defined time based event occurring.

10. (Original) The method as set forth in claim 9, wherein the step of displaying said manufacturing instruction further includes the step of emphasizing said manufacturing instruction in response to said event.

11. (Original) The method as set forth in claim 10, further comprising the step of discontinuing the emphasis in response to a second event.

12. (Previously Presented) A computing system for use in a manufacturing line comprising:

a plurality of workstations, each of said workstations including a display;

and

a computer controller connected to said workstations for receiving a desired fluid change associated with a manufacturing characteristic, enabling a change in a manufacturing instruction in response to said desired fluid change, and displaying said changed manufacturing instruction associated with a manufacturing component on workstation display.

13. (Previously Presented) A method, as set forth in claim 9, wherein said time based event is a predetermined time.

14. (Previously Presented) A method, as set forth in claim 1, further comprising the steps of:

identifying an operator; and

displaying said changed manufacturing instruction in response to said operator identification.

15. (Previously Presented) A computer based method, as set forth in claim 14, wherein the step of identifying an operator further includes the step of identifying a characteristic associated with said operator.

16. (Previously Presented) A computer based method, as set forth in claim 15, wherein the step of displaying said changed manufacturing instruction further includes the step of displaying said changed manufacturing instruction in response to said identified operator characteristic.

17. (Previously Presented) A computer based method, as set forth in claim 16, wherein said operator characteristic includes one of a characteristic indicative of whether the operator has previously been presented with the changed manufacturing instruction, a characteristic indicative of whether the operator is new at the workstation, and a characteristic indicative of whether the operator needs job reinforcement.

18. (Previously Presented) A computer based method of displaying a changed manufacturing instruction, comprising the steps of:

establishing a change associated with a manufacturing characteristic;

enabling said change in a manufacturing instruction in response to said changed manufacturing characteristic;

displaying said changed manufacturing instruction associated with a manufacturing component on a display screen associated with a first manufacturing workstation; and

changing a manufacturing instruction associated with a second manufacturing workstation in response to not performing said changed manufacturing instruction.

19. (Original) A method, as set forth in claim 1, further including the step of exhausting a first manufacturing component associated with said changed instruction before using a second manufacturing component in response to said changed manufacturing instruction.

Evidence Appendix

None.

Related Proceedings Appendix

None.